



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,646	03/31/2000	Hiroshi Tomiyasu	HAG 128	1768

7590

02/22/2006

Cook Alex McFarron Manzo Cummings & Mehler LTD  
200 West Adams Street  
Suite 2850  
Chicago, IL 60606

EXAMINER

RICKMAN, HOLLY C

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

W

<b>Office Action Summary</b>	<b>Application No.</b> 09/540,646	<b>Applicant(s)</b> TOMIYASU ET AL.	
	<b>Examiner</b> Holly Rickman	<b>Art Unit</b> 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) 20-25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,7,9,10,29,31,34,36,39,41,45,47,51,53,56,58,62,64,68 and 70 is/are allowed.
- 6) ☒ Claim(s) 11,12,14-19 and 74-79 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Continuation of Disposition of Claims: Claims pending in the application are 1,4,7,9-12,14-25,29,31,34,36,39,41,45,47,51,53,56,58,62,64,68,70 and 74-79.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The rejection of claims 11-12, 14-17, and 75 under 35 U.S.C. 102(b) as being clearly anticipated by Lee et al. (IEEE Trans Magn, Col. 31, no. 6, Nov. 1995, pp. 2728-2730) is withdrawn in view of Applicant's arguments.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The rejection of claims 1 and 5-6 under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al. (US 6403240) is withdrawn in view of Applicant's amendments.

4. Claims 11-12, 14-19, and 74-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (IEEE Trans Magn. Col. 31, no. 6, Nov. 1995, pp. 2728-2730).

Lee et al. disclose a magnetic recording medium having a substrate a multi-layered underlayer structure formed from alternating layers of NiAl and Cr deposited on the substrate and a magnetic layer thereon. One example of the inventive structure has the following underlayer structure: NiAl/Cr/NiAl/ Cr wherein the NiAl layers correspond to the claimed nonmagnetic layers, the first Cr layer corresponds to the claimed intermediate layer and the

Art Unit: 1773

second Cr layer corresponds to the claimed "under film." See Table II, specimen D. The reference fail to disclose the claimed range of 100-550 Angstroms for the thickness of the nonmagnetic layers. However, the reference clearly teaches that the thickness of the NiAl layers affect the coercivity. The reference gives several examples in Figure 3 wherein the thickness of the NiAl layer is within the claimed range (i.e., 25 nm for example). It would have been obvious to one of ordinary skill in the art at the time of invention to choose a suitable thickness for the NiAl layers, such as 25 nm, based on the desired coercivity of the recording medium.

It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

#### ***Allowable Subject Matter***

5. Claims 1, 4, 7, 9-10, 29, 31, 34, 36, 39, 41, 45, 47, 51, 53, 56, 58, 62, 64, 68, and 70 are allowable over the closest prior art to Kanbe et al. (US 6403240). Kanbe et al. fail to teach or suggest the claimed recording medium including a CrC layer containing Mn.

#### ***Response to Arguments***

6. Applicant's arguments filed 12/2/05 have been fully considered but they are not persuasive with respect to the rejection of the claims as being obvious over Lee et al.

It is noted that claim 13 was inadvertently left out of the rejection of claims 18-19, 74 and 76-79 under 35 USC 103 in view of Lee et al. (paragraph 10 of the Office action mailed 6/3/05). The subject matter of claim 13, now incorporated into claim 11, is not allowable for the reasons

Art Unit: 1773

set forth above. Because the claim was mistakenly excluded from the rejection set forth in the last Office action, this Office action has not been made final.

Applicant argues that Lee et al. do not teach the claimed thickness range for the nonmagnetic layers. However, Applicant's arguments do not address the examiner's position of record that the layer thickness is a result effective variable and thus, it would have been well within the purview of one of ordinary skill in the art to optimize the thickness.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Holly Rickman  
Primary Examiner  
Art Unit 1773